REMARKS

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application. This amendment is believed to be fully responsive to all issues raised in the June 2, 2004 Office Action. A Request for Continued Examination (RCE) accompanies this Response.

As stated above, claims 1, 10, 12, 13, 18 and 19 are currently amended and claims 1-3, 6-10, 12, 13, 18 and 19 are pending.

Problems Addressed by the Elected Species

The instant application addresses causes of heat exchanger failure. For example, the Background section states, at page 3, lines 12-20:

> Differential thermal expansion between elements of the heat exchanger 5 will cause a compression load to be applied to the quicker expanding sections (e.g. the core 20 and specifically the stack 26). As noted, a compression load is also applied to the stack 26 by the application of a pre-load. Compressive forces from pre-loading and differential thermal expansion can cause a variety of problems, such as buckling, fatigue failures and creep. Buckling is particularly problematic as it results in the stack 26 expanding outward (laterally) in one or more directions. During this outward expansion the plates 22 separate from one another, resulting in a nearly complete destruction of the heat exchanger.

The pending, elected claims are directed to thermally deformable tie rods that can reduce thermally induced buckling, fatigue failure and creep in heat exchangers. For various reasons that follow, Applicant submits that none of the

cited references disclose, teach or suggest the subject matter of the pending, elected claims.

Rejections Under 35 U.S.C. §102(b)

In the Office Action mailed June 2, 2004, the Office rejected claims 1-3, 6-10 and 12 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 1,855,552 to Jackocks et al. ('552 patent).

Anticipation is a legal term of art. Applicant notes that in order to provide a valid finding of anticipation, several conditions must be met: (i) the reference must include every element of the claim within the four corners of the reference (see MPEP §2121); (ii) the elements must be set forth as they are recited in the claim (see MPEP §2131); (iii) the teachings of the reference cannot be modified (see MPEP §706.02, stating that "No question of obviousness is present" in conjunction with anticipation); and (iv) the reference must enable the invention as recited in the claim (see MPEP §2121.01). Additionally, (v) these conditions must be simultaneously satisfied.

Specifically, the PTO and Federal Circuit provide that §102 anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). The corollary of this rule is that the absence from a cited §102 reference of any claimed element negates the anticipation. *Kloster Speedsteel AB, et al. v. Crucible, Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).

Claims 1-3 and 6-9

Claim 1 recites:

a. a core having a thermally variable size; and

b. a support structure connected to the core, wherein the support structure comprises a tie rod having a planar section, positioned intermediate and amid a first end and a second end of the tie rod, that thermally deforms to accommodate variations in the size of the core.

Applicant submits that the '552 patent does not disclose or teach the subject matter of claim 1. Applicant has amended claim 1 to more clearly set forth the subject matter of the elected species. Claims 2-3 and 6-9 depend on claim 1; thus, the '552 patent does not disclose or teach the subject matter of these claims. In particular, the '552 patent does not teach anything about a tie rod that thermally deforms to accommodate variations in the size of a heat exchanger core.

In the Office Action of June 2, 2004, the Office states that the '552 patent discloses "a plurality of tie rods . . . that thermally deform to accommodate the same rate of variation in the size of the core". Applicant disagrees. Instead, the '552 patent discloses hinged tie rods that swing in a plane or move angularly to accommodate thermal deformations of a core (see, e.g., page 2, left column, lines 1-9 and lines 39-50).

The '552 patent discloses and teaches an arrangement whereby rods allow for bowing and straightening out of tubes to thereby allow for deposits on

the tubes to flake off. Indeed, the '552 patent teaches that deformation of the tubes is advantageous and that the rods allow for such tube deformation. In contrast, the subject matter of claim 1 is directed to thermally deformable tie rods that can reduce thermally induced buckling, fatigue failure and creep in heat exchangers. Applicant fails to find any parallel between the '552 patent and the subject matter of claim 1.

Applicant asserts that the '552 patent does not (i) include every element of claim 1; (ii) recite the elements as set forth in claim 1; (iii) teach the subject matter of claim 1; and (iv) enable the invention as recited in claim 1. Consequently, Applicant respectfully submits that the rejection under 102(b) is traversed and that claims 1-3 and 6-9 are allowable.

Claims 10 and 12

Claim 10 recites:

a. a core having a first end and an opposing second end; and

b. a support structure, wherein the core is received by the support structure, wherein the support structure comprises:

i. a first strongback adjacent to the first end of the core;

ii. a second strongback adjacent the second end of the core; and

iii. a tie rod having a planar section, positioned intermediate and amid a first end and a second end of the tie rod, mounted between the first strongback and the second strongback and capable of applying a compressive load to the strongbacks even upon normal operational thermal deformation of the tie rod.

Applicant submits that the '552 patent does not disclose or teach the subject matter of claim 10. Applicant has amended claim 10 to more clearly set forth the subject matter of the elected species. Claim 12 depends on claim 10; thus, the '552 patent does not disclose or teach the subject matter of this claim. In particular, the '552 patent does not teach anything about a tie rod that is capable of applying a compressive load to strongbacks even upon normal operational thermal deformation of the tie rod.

As stated above for claims 1-3 and 6-9, the '552 patent discloses and teaches an arrangement whereby rods allow for bowing and straightening out of tubes to thereby allow for deposits on the tubes to flake off. Indeed, the '552 patent teaches that deformation of the tubes is advantageous and that the rods allow for such tube deformation. In contrast, the subject matter of claim 10 is directed to thermally deformable tie rods that can reduce thermally induced buckling, fatigue failure and creep in heat exchangers. Applicant fails to find any parallel between the '552 patent and the subject matter of claim 10.

Applicant asserts that the '552 patent does not (i) include every element of claim 10; (ii) recite the elements as set forth in claim 10; (iii) teach the subject matter of claim 10; and (iv) enable the invention as recited in claim 10. Consequently, Applicant respectfully submits that the rejection under 102(b) is traversed and that claims 10 and 12 are allowable.

Rejections Under 35 U.S.C. §103(a)

In the Office Action mailed June 2, 2004, the Office rejected claims 13, 18 and 19 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 1,855,552 to Jackocks et al. ('552 patent) in view of U.S. Patent No. 5,323,849 to Korczynski et al. ('849 patent).

The Office's burden in establishing a prima facie case of obviousness is set forth in the MPEP, which states:

> To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

M.P.E.P. § 2142.

Claims 13, 18 and 19

Claims 13, 18 and 19 depend on claim 10, which recites:

a. a core having a first end and an opposing second end; and

b. a support structure, wherein the core is received by the support structure, wherein the support structure comprises:

i. a first strongback adjacent to the first end of the core;

ii. a second strongback adjacent the second end of the core; and

iii. a tie rod having a planar section, positioned intermediate and amid a first end and a second end of the tie rod, mounted between the first strongback and the second strongback and capable of applying a compressive load to the strongbacks even upon normal operational thermal deformation of the tie rod.

Applicant submits that the subject matter of claim 10 is patentable over the '552 patent in view of the '849 patent. Applicant has amended claim 10 to more clearly set forth the subject matter of the elected species. Applicant asserts that claims 13, 18 and 19 are patentable over the '552 patent in view of the '849 patent.

A prima facie case of obviousness requires evidence in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Applicant asserts that such evidence does not exist in the '552 patent or in the '849 patent.

In the Office Action of June 2, 2004, the Office states that the '552 patent discloses "a plurality of tie rods . . . that thermally deform to accommodate the same rate of variation in the size of the core". Applicant disagrees. Instead, the '552 patent discloses and teaches hinged tie rods that swing in a plane or move angularly to accommodate thermal deformations of a core (see, e.g., page 2, left column, lines 1-9 and lines 39-50).

Further, the '552 patent discloses and teaches an arrangement whereby rods allow for bowing and straightening out of tubes to thereby allow for

deposits on the tubes to flake off. Indeed, the '552 patent teaches that deformation of the tubes is advantageous and that the rods allow for such tube deformation. In contrast, the subject matter of claim 10 is directed to thermally deformable tie rods that can reduce thermally induced buckling, fatigue failure and creep in heat exchangers. Applicant fails to find any parallel between the '552 patent and the subject matter of claim 10. Yet further, Applicant fails find any evidence in the '849 patent that would suggest a modification of such an arrangement to arrive at the subject matter of claim 10. Even if one did combine the teachings, Applicant finds no evidence as to a reasonable expectation of success. Consequently, Applicant respectfully submits that the rejection under 103(a) is traversed and that claims 13, 18 and 19 are allowable.

Conclusion

Pending claims 1-3, 6-10, 12, 13, 18 and 19 are believed to be in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

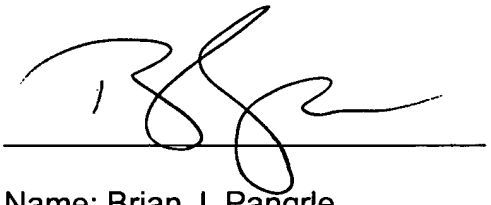
Respectfully Submitted,

Lee & Hayes, PLLC

421 W. Riverside Avenue, Suite 500

Spokane, WA 99201

Dated: 9-2-04



Name: Brian J. Pangrle

Reg. No. 42,973

Phone No. (509) 324-9256 ext. 231